

# Special Monitoring Project



# Seaboard Farms Air Monitoring Project

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Wichita County, Kansas  
November 2002 – September 2004

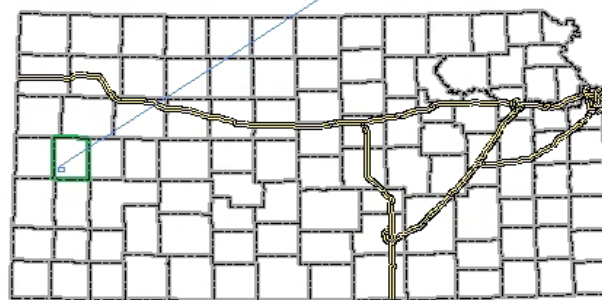
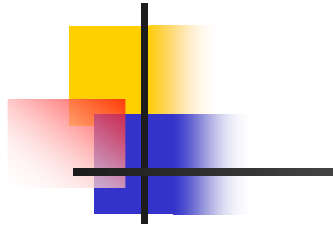


# Project Background

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- May 2000 – Seaboard Farms, Inc. and Maple Creek , Inc. submitted an application to KDHE for construction and operation of a Confined Animal Feeding Operation (CAFO).
- Known as Bergkamp facility – design capacity of 86,400 swine or 34,560 animal units.
- November 2002 - Agreement signed for operation of ambient air monitoring site.

**Figure 1. Seaboard Farms Air Monitoring Site**





Facility Location: 8 miles south and 5 miles west of Leoti, KS

Legal Location: T19S R38W S35,36;  
T19S R37W S31; T20S R38W S1;  
Wichita County, KS

Monitoring Site lat/long: 38.37185/-101.45800

#### Legend

 Wichita County  Air Monitoring Site

Miles  
0 0.3 0.6

Meters  
0 480 960



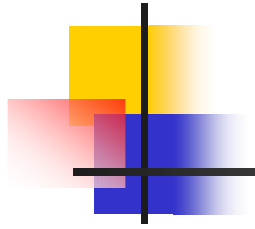
Digital Orthophoto Source: [gisdasc.kgs.ku.edu](http://gisdasc.kgs.ku.edu)



# Parameters Monitored

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- Hydrogen sulfide ( $\text{H}_2\text{S}$ )
- Ammonia ( $\text{NH}_3$ )
- Particulate matter ( $\text{PM}_{10}$ )
- Meteorological parameters – wind speed, wind direction, relative humidity, barometric pressure and ambient temperature



# Project Phases

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- Phase I – baseline monitoring was conducted prior to population of the facility.
- Phase II – monitoring continued for a period of 1 year during actual operation of facility after reaching 90% of permitted capacity.
- Phase III – monitoring shall be conducted for a period of 2 months after land application of effluent is initiated.



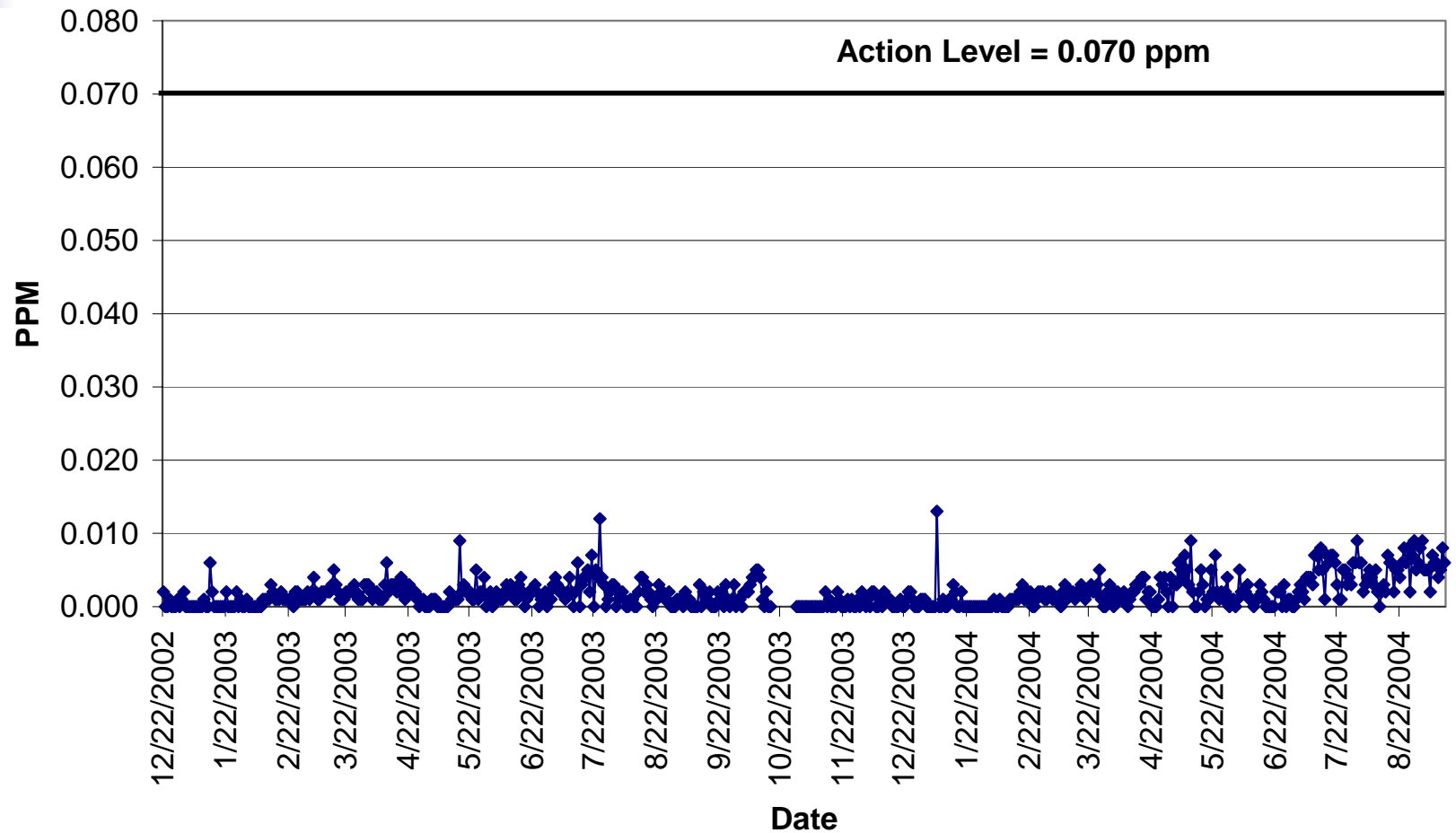
# RESULTS



20/05/2003

# Hydrogen Sulfide Data

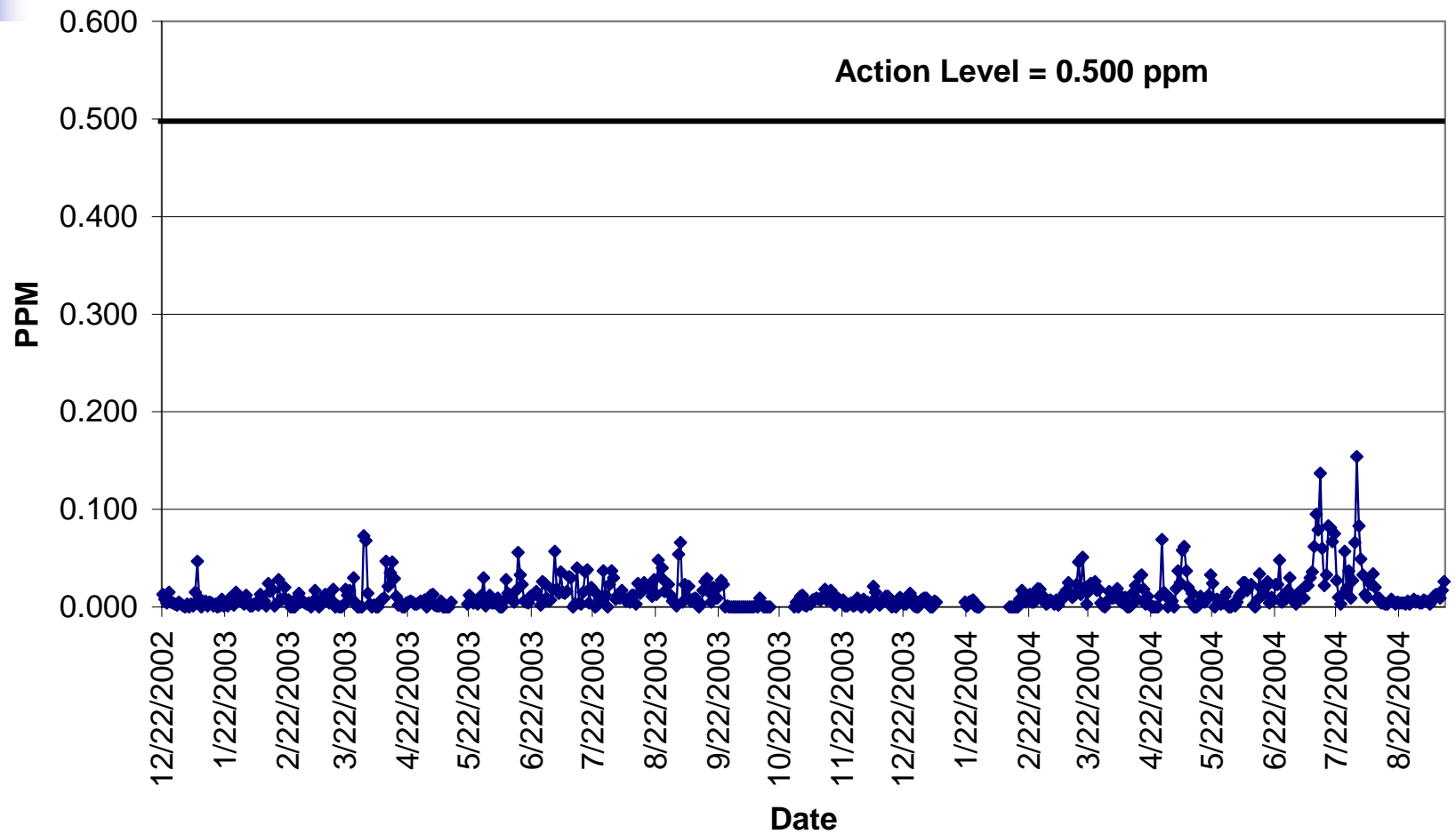
Figure 4. H<sub>2</sub>S Daily Highs





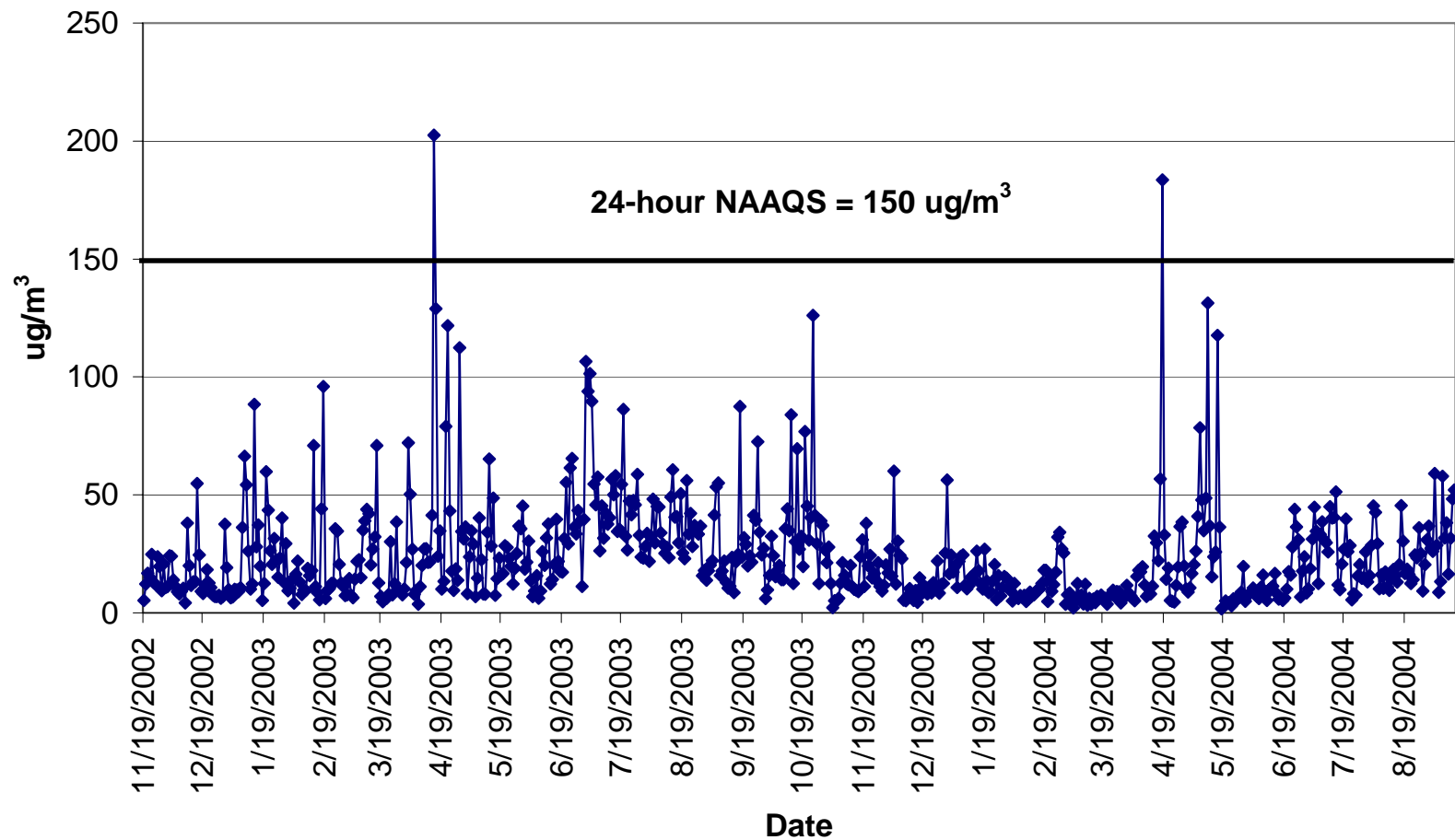
# Ammonia Data

Figure 6.  $\text{NH}_3$  Daily Highs



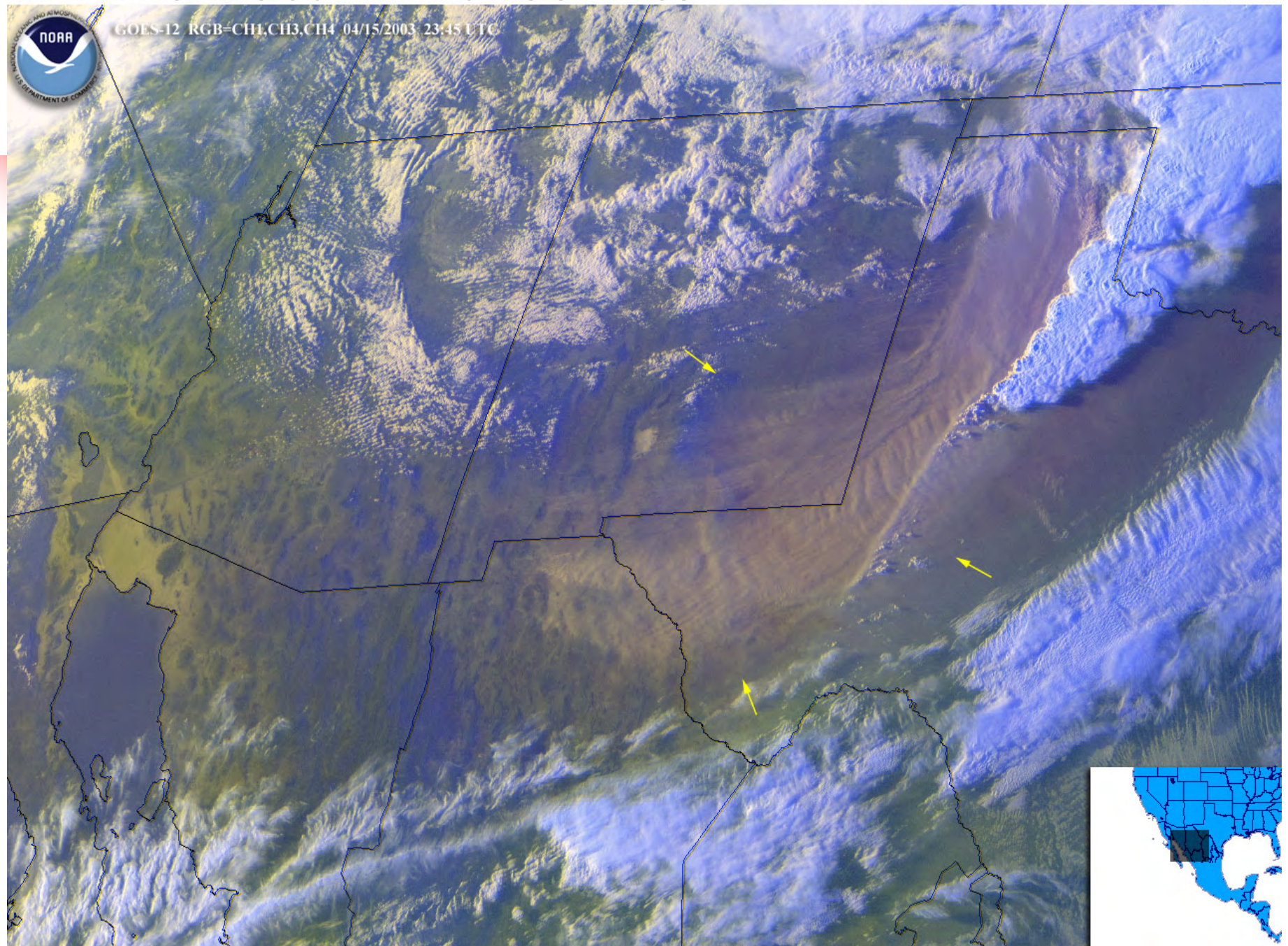
# Particulate Matter Data

Figure 8. PM<sub>10</sub> TEOM Daily Averages



Dust (gray haze) is visible across central plains region. Powerful winds with gusts as high as 130 mph swept through southern New Mexico on April 15, 2003, prompting road closure and causing a 10-car pileup that killed two people

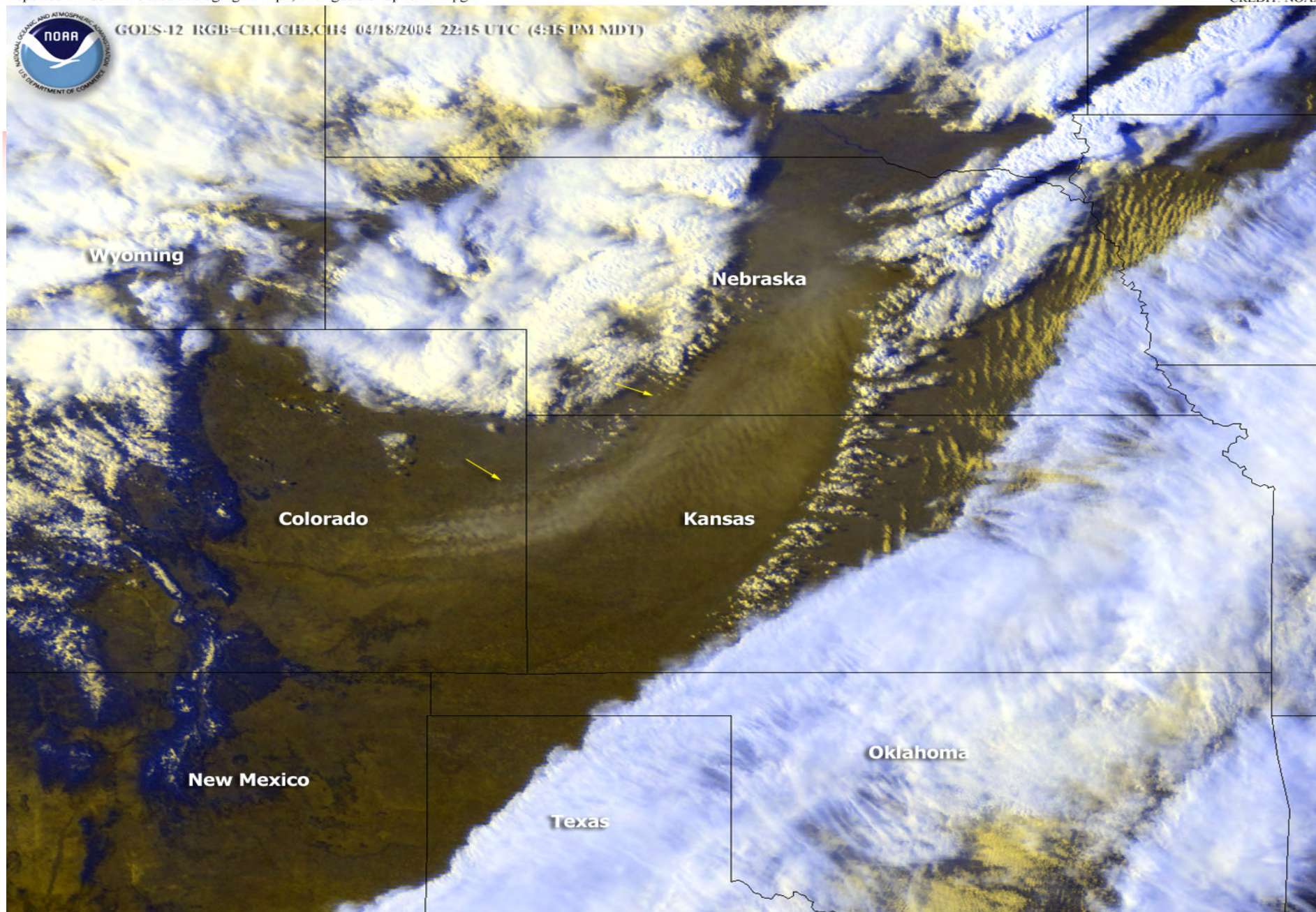
CREDIT: NOAA





Dust (indicated by the yellow arrows) is visible across parts of Colorado, Kansas, and Nebraska. According to the Rocky Mountain News, high winds kicked up a blinding dust storm on Sunday that caused a 17-vehicle accident on Interstate 70 in eastern Colorado injuring 20 people and forcing closure of the highway for nearly five hours. The National Weather Service reported winds in the area averaging 38 mph, with gusts of up to 47 mpg.

CREDIT: NOAA





# Conclusions

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- No readings above “action levels” for ammonia or hydrogen sulfide.
- 2 PM<sub>10</sub> exceedances of the 24-hour standard but not a violation because allowed 3. Weather related!
- Higher NH<sub>3</sub> readings were associated with winds from the south and southwest and likely caused by facility.